The ratio control modified the air system of the RTO-11613, 11813, 14613, 14813, 15613, 15813 13-speed transmission. It converts a 13-speed transmission to a 10-speed transmission with a short-stepped overdrive ratio. It provides gear ratios to match low rpm economy and conventional engines from on/on-off truck startup to highway cruising.

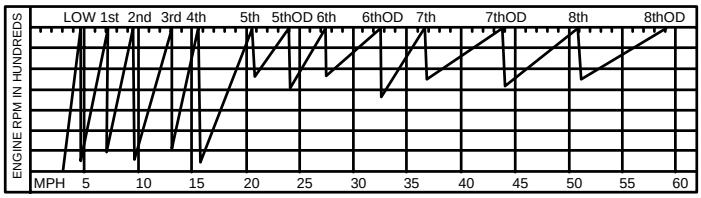
The high range 5th, 6th and 7th speed overdrive splitter gear ratios of the 13-speed transmission are locked out. Overdrive in 8th is retained. The gear splitter is used only once between 8th and 8th overdrive providing a short 15% ratio split.

Ratios with and without the ratio control:

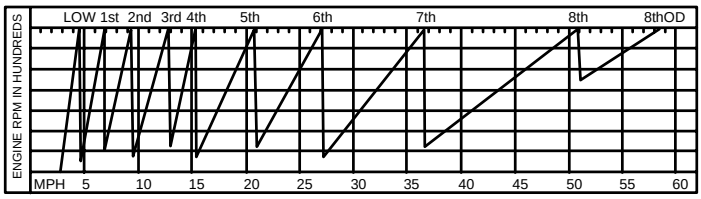
Standard			With Ratio Control	
8th OD	.87		.87	
		15%		15%
8th DIR	1.00		1.00	
		17%		
7th OD	1.17			34%
		15%		
7th DIR	1.34		1.34	
		19%		
6th OD	1.60			37%
		14%		
6th DIR	1.83		1.83	
		17%		34%
5th OD	2.15			
		14%		
5th DIR	2.46		2.46	
		37%		37%
4th	3.38		3.38	
		34%		34%
3rd	4.54		4.54	
		36%		36%
2nd	6.18		6.18	
		35%		35%
1st	8.32		8.32	
		51%		51%
Low	12.56		12.56	

As a comparison of speed cruising ranges and shift points, performance charts of both units are shown below.

Without Ratio Control



With Ratio Control



Top speed will depend on governed engine RPM, axle ratio and tire size

The changes needed to mount the ratio control on a 13-speed transmission are: a new shift bar housing, new 7th/8th yoke bar, a shutoff valve and connecting air lines and fittings.

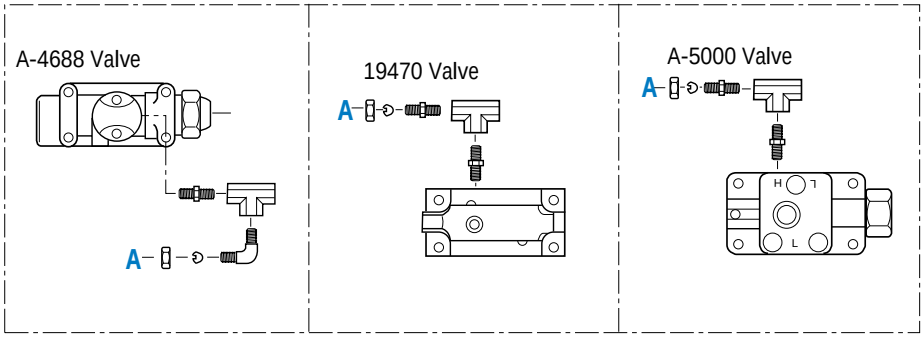
The shutoff valve, mounted on the shift bar housing, locks out 5th, 6th and 7th overdrive by blocking air to the splitter control valve, making the splitter cylinder inoperative. A notch in the 7th/8th yoke bar opens the shutoff valve when the shift lever is in the 8th speed gear position, providing air for the shift to 8th overdrive.

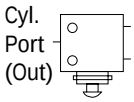
To convert from a ratio control model to a 13-speed transmission requires only the changing of one air line in order to bypass the shutoff valve.

Ratio Control Kits

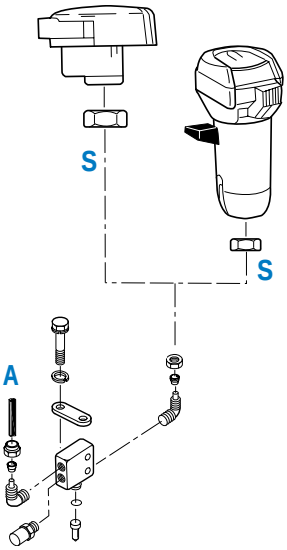
AIR SYSTEM WITH RATIO CONTROL

Typical Installation





Install 7935 Breather In Unused Port
Use For Lockout Of O.D. Except In 8th
Use For Lockout Of O.D. In 8th Only

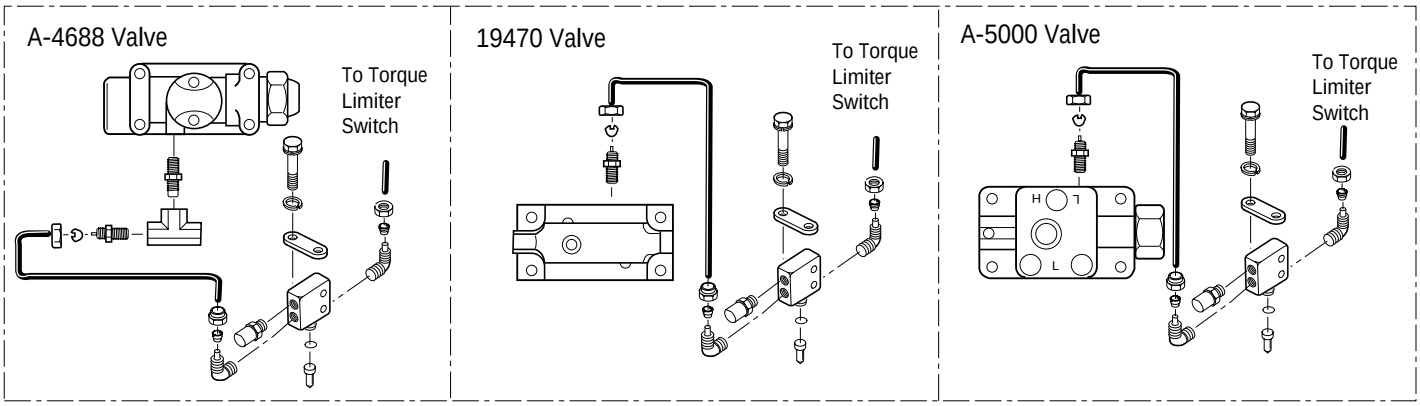


Model Application	Part Number	Description
13 Speed 11600-14600-15600	K-1903	RTO
	K-1897	RTOF
	K-1909	RTOO
	K-1899	RTOOF
	K-2200	RTOX-11613, 14613
	K-2201	RTOXF-11613, 14613

Torque Limiter

AIR SYSTEM WITH TORQUE LIMITER

Typical Installation



A Torque Limiter Option is available for the following transmission model series

1157DL	11607L
1157DLL	11607LL

The engine torque is limited during low gear operation through the use of a torque limiting device on the engine. This feature is activated by a valve on the shift bar housing.